



LLAIS Y DDRAIG - THE DRAGON'S VOICE

CYLCHLYTHYR CLUB RADIO AMATUR Y DDRAIG NEWSLETTER OF THE DRAGON AMATEUR RADIO CLUB

Hydref 2012 Autumn Rhif/No. 100

PWYLLGOR/COMMITTEE

Cadeirydd/Chairman: Danny Shurmer. GW7BZR

Is-Gadeirydd/Vice-Chairman: Chris Tanner. MW0LLK

Ysgrifennydd/Secretary: Stewart Rolfe. GW0ETF

Trysorydd/Treasurer: John L Brimecombe. GW3GUX

Aelodau/Members: John Jones MW0BER. Richard Zieba MW3RWZ. Bill Williams GW0IQZ. Tony Wright GW0LIS

Web site: <http://www.radioclubs.net/dragonarc/>

Cynhelir cyfarfodydd y clwb yn Neuadd Ebeneser Lon Foel y Graig, Llanfairpwll ar Nos Lun y cyntaf a'r trydydd yn y mis am 7.30 ar gyfer 8.00 o'r gloch. Croeso i ymwelwyr ac aelodau newydd.

Club meetings held at Ebeneser Hall, Lon Foel y Graig, Llanfairpwll on the evening of the first and third Monday in each month at 7.30 for 8.00. Visitors and new members always welcome.

Pob gohebiaeth at yr ysgrifennydd. All communications to the Secretary, Stewart Rolfe GW0ETF at:

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A Century – Not Out

The very first club newsletter, or quarterly news sheet as it was called then, was issued in April 1985 and was written by the Chairman at the time, John Richards GW0AQR. (Who is now, and has been for a long time, the local newsreader for the RSGB news service – GB2RS).

I wonder how many members at that time thought that the Voice of the Dragon (Llais y Ddraig), as it came to be called, would still be going after a hundred issues. Certainly John was not sure that it would make it after the third issue, due mainly to the lack of contributions – now where have I heard that before! - but, continue it did.

For many years, the editor was the late Dewi Roberts GW0ABL and what a great job he did, including drawing his own cartoons (very often about birds perched on aërials) and stories of how he started in amateur radio. I wonder, do we have a budding cartoonist out there who would like to see his or her work in print?

Over the years since the first DARC newsletter, many things have changed in all walks of life, with the rate of change seeming to get faster with each passing decade (or less, or is it just me getting older!). In addition to the 'normal' things such as people going SK or moving away, a few of the other changes we have seen are, the abolition of the Morse test, the replacement of the old RAE by the three stage examinations for Foundation, Intermediate and Advanced licences, giving (rightly or

wrongly) a much easier starting requirement into Amateur Radio, Ofcom, the introduction of 'free for life' licences, the greatly increased use of computers and microprocessors in rigs, etc. the hotly contested issue of Anglesey (less Holy Island) being deleted from IOTA programme and while not directly concerned with amateur radio, the closure of all the Coast Radio Stations in the UK. Some people predicted the end of the hobby with the introduction of the new examination structure and withdrawal of the Morse test and that the free licence for life would downgrade our hobby to little more than that of Citizen's Band radio. Has it happened – I don't think so, and if you think CW is dead, just listen to the bands during a CW Contest.

Another change over the years is our own attitude to the various aspects of amateur radio. One good example of this is from our Secretary, Stewart 'ETF', who has, over the years, undergone a major change in his attitude to contesting. In 1999 he wrote an article about taking part in the RSGB AFS contest; his conclusion was that it was: Too hectic (radio is a leisure activity), too competitive, too noisy and too repetitive to name a few (adverse) comments. But now look, he is the leading light in the club for not only taking part in many and varied contests but for encouraging as many other club members as possible to follow his example, both at home and out in the caravan.

Many things are, of course, being repeated, the main one naturally being the request for articles, ideas or suggestions for inclusion in the newsletters.

One item which started to be a concern some years ago was the increasing cost of production and distribution of the newsletters, in fact as far back as 2000, Dewi was writing about the costs of Printing and Postage and how it could be minimised, including the idea of sponsorship by members. However, despite an increase in membership (we now have an all time record of 55) and greatly increased postal charges, thanks to the use of modern printers and especially distribution by email, the cost of production and distribution has gone down over the last few years – I now only have to print and post about ten copies for those members who are without computers or email facilities.

How Much Space Do We Need

No, this is not about erecting large aerials in a small garden, rather, a brief and simplified look at the amount of RF spectrum or bandwidth that various methods of transmitting information take up and why use the different modes.

For this short article we will consider the following more common types of transmission: C.W. (or Morse), PSK31, RTTY, A.M., SSB and N.B.F.M. as well as a couple of more esoteric modes, such as QRSS and Olivia. I have not included any wide band modes such as ATV, though Slow Scan TV with its audio bandwidth could be included.

As the saying goes 'there is no such thing as a free lunch' and the same goes for the different types of transmission modes. There is always some trade-off between various parameters: Complexity or simplicity of equipment, Power required, Transmission speed, Bandwidth, Signal/Noise Ratio and Efficiency to name a few.

With all systems and modes, it is assumed that the equipment has been set-up correctly, as it is all too easy to splatter over a large chunk of RF spectrum with badly adjusted equipment.

One main item to be considered when talking about **receiver** bandwidth, is the signal to noise ratio obtainable. In general, the narrower the receiver bandwidth is made, the better will be the S/N ratio, and a lower RF signal level will be required to convey a given amount of information.

It is a natural assumption that for a CW signal, the bandwidth required is very small; this is to a certain extent true. However, as soon as the carrier is keyed on and off as in Morse, then the bandwidth required goes up in relation to the keying speed (and keying wave-shape), in practice, Morse at 25 words per minute takes up about 100Hz of spectrum. The use of 'normal' speed Morse has a lot going for it, the equipment can be quite simple, with low output power capable of giving worldwide coverage. It has high efficiency, both in terms of power consumption, which is good for portable operation, and compared with say SSB has a much higher power density with the same output. Part of the reason for better coverage than SSB when using like powers, is that the receiver bandwidth is much less, usually filtered to about 500Hz, enabling weaker signals to be copied due to the better Signal to Noise ratio of the receiver (see above). Drawbacks are that it is

comparatively slow and one must learn the language.

QRSS. **Very** slow speed Morse, takes this idea of very narrow bandwidth to extremes, with bandwidth of less than 1Hz. being quite normal. Using this mode, it is possible to copy signals so low in the noise that they are inaudible. The problems are that as the name implies, it is a very slow mode, a single 'dit' could take minutes to send, so a QSO could take a long time! This mode is mainly used on the VLF bands and uses a computer program and very high stability transmitters and receivers, usually locked to a GPS receiver.

Two other 'digital' modes are PSK31 and RTTY. PSK31 uses phase shift keying and uses (as its name implies) a bandwidth of only about 31Hz. when correctly set-up. This mode gives good DX coverage for low power output but requires the use of a computer (or dedicated equipment). RTTY, or Radio Teletype, using frequency shift keying (or audio frequency shift keying), has a bandwidth of about 300 Hz. when used with the normal shift of 170Hz. Originally, RTTY was an electro-mechanical system, but just about all amateurs now use computers for this mode. It has more or less the same advantages/disadvantages as PSK31.

Another 'new' digital mode, which is being used more these days, is OLIVIA. This uses multi-audio tones within a fixed bandwidth and is capable of resolving signals well below the noise level. The number of tones used dictates the bandwidth; the most common combinations for amateur use are 16 tones with a bandwidth of 500Hz. and 32 tones with a bandwidth of 1Khz. The drawbacks are, the use of a computer, comparatively few amateurs are using it at the moment - but the numbers are increasing rapidly, it is generally slower than PSK31 (but in practice I think that only very fast typists would be able to tell!) and for a digi-mode it uses more bandwidth.

One aspect of using these digi-modes is that the transmitter is often running at a very high duty cycle, i.e. running at full output power for much longer than with most analogue modes, either turn down the power (there is no need for high power with these modes anyway) or make sure the transmitter is designed to operate with a very high duty cycle.

AM and SSB are too common to need to go into detail, with bandwidths of approximately 5.5 Khz. and 2.7 Khz. respectively. AM is mainly used these days by a dedicated band of followers with older (but not always!) rigs. It is quite inefficient in its use of both power and bandwidth, but is (comparatively) easy to build and set-up when compared to SSB.

Narrow Band Frequency Modulation equipment is normally used on VHF and above, and has a bandwidth of between 5 Khz and 10 Khz depending on the deviation and channel spacing.

So where does that leave us? As always it is horses for courses depending on what the main aspect of this wide-ranging hobby is of the most interest to the individual. Have a try at a different mode than usual – you may be converted to something else!

Club Insurance

As most of you will know by now, the company we dealt with for club insurance ceased trading in providing amateur radio insurance cover earlier this year.

We were covered for all risks on our equipment whether it was at individuals' homes, in the hall or at or being taken to a special event. In addition to this we also had personal accident cover for members whilst taking part in one of our own special events. This was for club members between the ages of 16 and 75 only. Public liability cover (for up to five million pounds) was (and still is) provided by our affiliation to the RSGB.

After the expiry of our 'old' insurance on 27th July this year, we still have 'all risks' cover for our equipment on the same basis as before, but there is now no personal accident cover for members taking part in any club activity such as special events, etc. This means that if you are **taking part in a club activity** and have an accident, not of your making, then the only recourse you have is to make a claim for negligence against the site, hall, etc. owner/operator, or against another individual club member, **NOT THE CLUB**. I feel that this would be a last resort measure and only resorted to in the case of a major accident. This is under what is known as the Member-to-Member section of the insurance. If however, you were attending, **but not taking part in**, a club event, then, despite being a club member, you would be treated as a member of the public and the public liability section of our insurance would cover any accident you sustained. Yes, I know that it seems very strange, but that seems to be the situation. I can only suggest that all members should be aware of the situation and if they feel strongly about it, take out some sort of private personal accident cover.

GW4TTA in IOTA 2012 (By Stewart 'ETF)

After a year off due to enforced repairs to the club caravan we once again took part in the popular Islands On The Air contest. This is an ssb/cw event lasting 24 hours from 1200 utc on Saturday of the last weekend in July, and as usual we operated from the breakwater in Holyhead, which is in IOTA reference EU-124.

We had some missing personnel as a result of holidays, recovering from major surgery, or more important family matters to attend to which left me in overall charge(!). We enter this contest in a low power multi-operator category (without cluster) using 2 radios where the second is used just to work multipliers, which are new IOTA entities. This involves networking the computers together and creates a bit more complexity in logging which those unfamiliar with contesting and the log keeping software have to grapple with; the shortage of experienced hands this time was a bit of a challenge at times!

Danny GW7BZR our chief organiser and whip cracker had only just returned from Liverpool where surgeons had unzipped his torso to repair his heart, so he definitely wasn't going to do anything for the weekend even if he wanted to. Luckily Neil Adam MW6BKS was able to tow the caravan to and from Holyhead with his Landrover, and I managed to squeeze Danny's generator, fuel cans, radios, computers, cables etc into my Fiesta early on Saturday morning. The caravan was towed to Holyhead on Friday and John MW0BER with Graham MW6PAM turned up on Saturday to help heave the doublet into position and install the vertical for the mult radio. Several members appeared to operate during daylight hours and Tony GW0LIS and myself kept it going overnight. Conditions didn't seem all that good but the activity was good and I had no trouble staying awake for the whole contest; we ended up with about twice the number of points claimed compared to last time, mainly due to a much better multiplier count.

Saturday morning being more hectic than I would have wished because of the usual 'too many operators, too few riggers and testers' syndrome, the contest for me was really enjoyable. The operator list shown on the log is 2W0RZL, GW0ETF, GW0LIS, MW0AQZ, MW0BER, MW0LLK, MW6PAM, MW6TBC; thanks to all and well done to those who had to grapple with the steep learning curve of networked N1MM! Must also mention Neil for caravan towing, and Danny for the loan of equipment – get well soon, we miss you! Results are:-

Band Mhz	Mode	QSOs	Points	IOT
3.5	CW	112	970	25
3.5	LSB	14	130	6
7	CW	168	1300	39
7	LSB	91	995	22
14	CW	258	1710	35
14	USB	37	485	30
21	CW	192	1130	17
21	USB	103	845	29
28	CW	12	100	4
28	USB	3	45	3
Total	Both	990	7710	210
<u>Score (Claimed):</u>		1,619,100		

RSGB Centenary

Mark Harper our RSGB Regional Manager, has recently reminded all Reg. 6 clubs that 2013 is the Centenary of the RSGB. To celebrate this a special call sign has been negotiated for use by clubs or even individuals taking part in some sort of special event. Watch this space for further details.

Finally

A warm welcome back to both Gwilym 'DLK (on the door) and our Chairman, Danny 'BZR; both of whom have been in hospital recently. Enjoy what is left of the summer. Vy 73 John. GW3GUX.